



SEATBACK ASSEMBLY LABORATORY IMPACT TEST PROCEDURE-HEAD AREA—SAE J346

SAE Recommended Practice

Report of Body Engineering Committee and Automotive Safety Committee approved June 1968.

1. Scope—This SAE Recommended Practice describes a laboratory test procedure for evaluating the head impact characteristics of such areas of an automotive seatback assembly as may be required to meet impact performance established for the protection of lap-belted occupants.

2. References

2.1 Applicable seatback assembly performance requirements including their associated definitions of "head impact area."

2.2 SAE J984 and SAE J977.

3. Items To Be Measured

3.1 The following items shall be measured:

3.1.1 **IMPACT VELOCITY**—The velocity of the bodyform at the moment of contact with the test specimen.

3.1.2 **ACCELERATION—TIME HISTORY OF HEADFORM**—The tangential acceleration-time curve of the axis of symmetry of the bodyform during the period of contact with the test specimen.

3.1.3 **START OF IMPACT**—An electrical contact shall be placed on the test specimen such that an indicating mark will register on the record when the bodyform initially contacts the test specimen.

3.2 Measurement of the following items is optional:

3.2.1 **REBOUND VELOCITY**—The maximum velocity of the headform after it breaks contact with the test specimen.

3.2.2 **DYNAMIC HEADFORM DISPLACEMENT**—The maximum penetration of the bodyform after initial contact with the test specimen.

4. Location and Direction of Impact (Fig. 1)—Within the head impact area, all impacts shall be conducted in accordance with the following procedure:

4.1 Impact points and bodyform positioning at these impact points shall be determined considering the applicable seatback assembly performance requirements.

4.2 At impact, the direction of travel of the leading point of the headform (Fig. 2) shall be:

4.2.1 In side view, perpendicular to a line drawn through the impact point and through the seating reference point. (The seating reference point is taken from the vehicle package drawing and represents the hip pivot point of the SAE J826 two-dimensional manikin.)

4.2.2 In plan view, in a vertical plane perpendicular to the seatback contour ± 10 deg.

4.3 If, due to the characteristics of the test equipment, the bodyform would strike another part of the seatback assembly prior to contacting the desired impact point, the direction of impact may be adjusted only enough to prevent such prior contact.

5. Test Equipment and Instrumentation

5.1 The test equipment shall consist of a 15 lb (6.8 kg) effective mass impact device capable of being accelerated to the desired velocity. The seatback assembly shall be mounted in the actual vehicle or on a fixture that is at least as rigid as the actual vehicle mounting.

5.2 The metal bodyform specified in SAE J984 or its equivalent shall be used.

5.3 The bodyform shall have sufficient offset with respect to its supporting structure to preclude contact of the structure with the seatback assembly during the impact.

5.4 Any system of instrumentation that will measure the items in paragraph 3 and meet the performance requirements of SAE J977 is acceptable.

6. Test Procedure

6.1 Fully trimmed seatback assemblies shall be used.

6.2 Any substructures, braces, etc. which could significantly influence the impact performance of the installed seatback assembly shall be included in the specimens tested.

6.3 All samples shall be maintained at an ambient temperature ranging between 70-85 F (21.1-29.4 C) for 12 hr prior to testing.

6.4 Impact the samples.

6.5 Record the test data, post-impact condition of the sample, and any unusual conditions on the data sheet.

7. Appendix—Although any impacting device is acceptable providing it will meet the specifications of this test procedure, Fig. 3 is included to show a typical impact apparatus. Specifications for this apparatus may be obtained from SAE, Detroit Branch, 18121 E. Eight Mile Road, East Detroit, Michigan 48021.

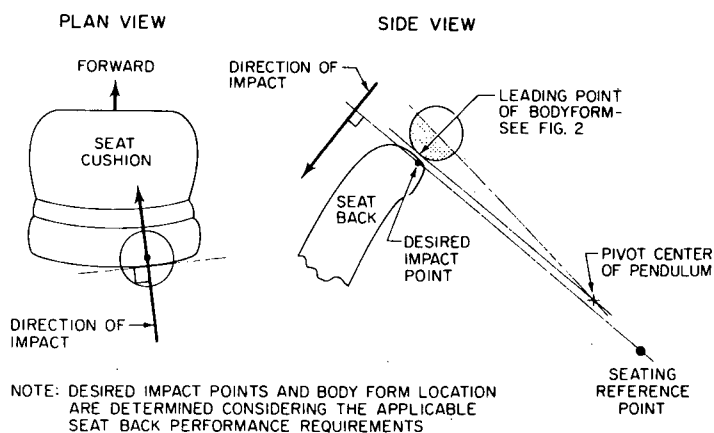


FIG. 1—LOCATION AND DIRECTION OF IMPACT

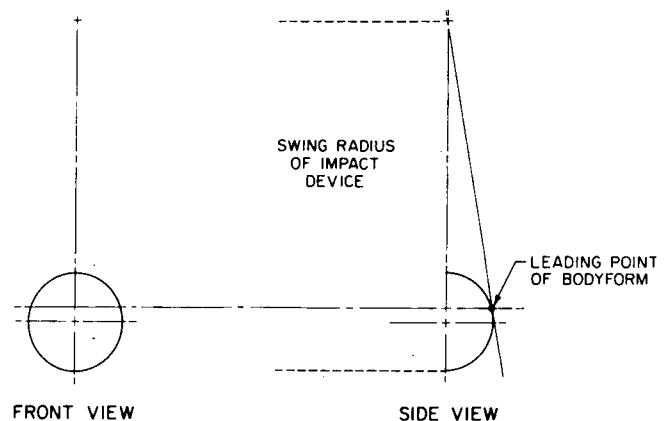


FIG. 2—DEFINITION—LEADING POINT OF BODYFORM

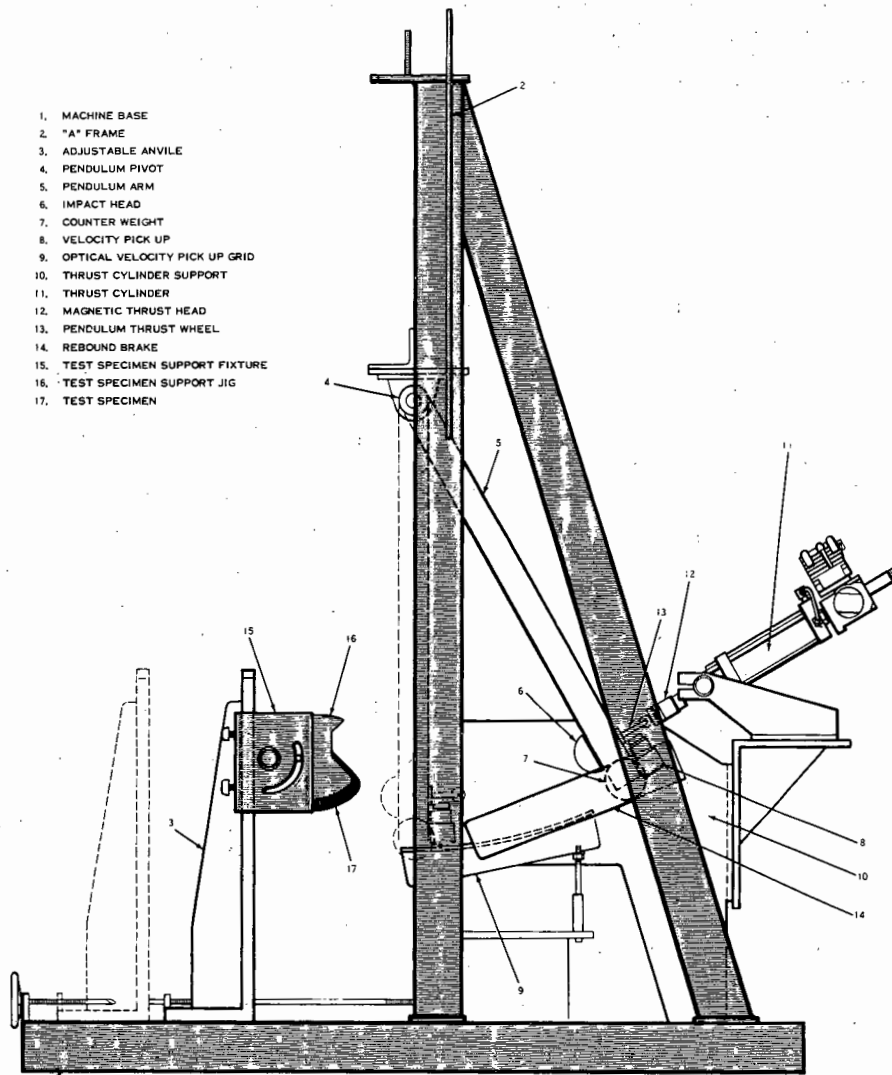


FIG. 3—TYPICAL IMPACT APPARATUS

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